Docket number 12 - EPIC - 01: EPIC Second Investment Plan

Recommended addition: Research in energy storage solutions

Submitted by:

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Background

The CPUC has recently ordered electric utilities to invest in energy storage, specifically 1,325 MW by 2020. There is a lack of viable storage solutions to meet this requirement at the present time.

The reason for the CPUC decision is that the intermittency of renewable sources limits their penetration into California's electricity system, which can be improved by incorporation of energy storage to provide energy during non-producing periods of the renewable sources. Thus a research initiative in energy storage would clearly advance Strategic Objective S3, "Develop innovative solutions to increase the market penetration of distributed renewable and advanced generation." Research in improving energy storage solutions would provide ratepayer benefits in every category of table 4.

It could be argued that initiative S3.4 could include research in energy storage systems. However, there is no mention whatsoever of energy storage in that topic, so it is unclear to potential proposers that energy storage research would be considered.

Incorporating energy storage in renewable plant designs would improve their performance, for instance by increasing their output during peak load periods. Therefore, energy storage research would also advance Strategic Objective S4, "Improve Power Plant Performance, Reduce Cost, and Accelerate Market Acceptance of Existing and Emerging Utility-Scale Renewable Energy Generation Systems." Again, research in energy storage would provide ratepayer benefits in every category of table 5.

One might suggest that initiative S4.2 could include storage solutions. However, all of the examples given under initiative S4.2 are analytical and not physical in nature, so it does not appear that research in energy storage (other than analyses) would be considered in that topic.

Recommendation

I strongly recommend that a specific research initiative for energy storage be added to the investment plan. Specifically, it is recommended that a new initiative S3.6, "Develop novel energy storage technologies and improvements to existing storage technologies to improve penetration of intermittent energy sources" be added to the plan.